

FEDERAL COURT OF AUSTRALIA

ALLSOP CJ, KENNY, BESANKO, NICHOLAS AND YATES JJ

THE COURT:

INTRODUCTION

- 1 The appellants, Encompass Corporation Pty Ltd and SAI Global Property Division Pty Ltd, are, respectively, the patentee and claimed exclusive licensee of Australian Innovation Patent 2014101164 (the **164 Patent**) and Australian Innovation Patent 2014101413 (the **413 Patent**) (together, the **patents**). They sued the respondent, InfoTrack Pty Ltd, for infringement of claims 1, 2 and 3 of the 164 Patent and claims 1, 2, 3 and 4 of the 413 Patent. The respondent admitted that its conduct infringed the claims, if the claims were valid. It cross-claimed against the appellants seeking orders that claims 1 to 4 of the 164 Patent and claims 1 to 5 of the 413 Patent be revoked on the basis that they were invalid on various statutory grounds. The primary judge found that neither patent claimed a patentable invention in that, in each case, the invention was not a manner of manufacture within the meaning of section 6 of the *Statute of Monopolies*: see s 18(1A) (a) of the *Patents Act 1990* (Cth) (the **Act**). On 12 April 2018, he made orders revoking each patent.
- 2 In this appeal, the appellants contend that his Honour was in error in doing so because he ought to have found that the invention, as claimed in each patent, involved a manner of manufacture. In their amended notice of appeal, the appellants plead numerous alleged errors which, they contend, the primary judge made in coming to his conclusion in this regard. These include the misapplication of the Full Court decisions in *Research Affiliates LLC v Commissioner of Patents* [2014] FCAFC 150; 227 FCR 378 (**Research Affiliates**); *Commissioner of Patents v RPL Central Pty Ltd* [2015] FCAFC 177; 238 FCR 27 (**RPL Central**) and *CCOM Pty Ltd v Jiejing Pty Ltd* (1994) 51 FCR 260 (**CCOM**). The appellants plead in the alternative that *Research Affiliates* and *RPL Central* were wrongly decided in certain respects. However, as the appeal came to be argued, the focus of the appellants' argument was that *Research Affiliates* and *RPL Central* had been correctly decided and that the primary judge misapplied the principles articulated in those decisions.

3 In the proceeding below, the respondent also alleged that claims 1 to 4 of the 164 Patent and claims 1 to 5 of the 413 Patent lacked an innovative step. The primary judge found that claim 2 of the 164 Patent and claim 1 of the 413 Patent were each supported by an innovative step in the form of a purchasing step which made a substantial contribution to the working of the invention, as claimed. His Honour did not give express consideration to the implications of these findings in respect of the other claims whose validity was in contest on this basis. It may be that his Honour did not consider it necessary to do so in light of his conclusion that none of claims of the two patents was directed to a manner of manufacture and thus claimed patentable subject matter in any event. However, on one reading of his Honour's reasons, it is also possible that he considered that the support of one claim (claim 2 of the 164 Patent) by an innovative step was sufficient to provide that support for all other claims.

4 The appellants contend that the primary judge erred in his construction of the claims in suit and that, on their proper construction, those claims are supported by innovative steps which his Honour was not prepared to find.

5 Finally, the appellants contend that the primary judge erred in the costs order he made at the conclusion of the proceeding.

6 The respondent has filed a notice of contention in which it contends that the primary judge ought to have found that the invention as claimed in each and every claim of the 164 Patent and the 413 Patent was liable to be revoked for lack of an innovative step. They also challenge the correctness, in certain respects, of the Full Court decision in *Product Management Group Pty Ltd v Blue Gentian LLC* [2015] FCAFC 179; 240 FCR 85 (*Blue Gentian*).

7 For the reasons given below, we are not persuaded that the primary judge erred in concluding that each patent does not claim an invention that is a manner of manufacture within the meaning of section 6 of the *Statute of Monopolies*. On the basis of the submissions that have been advanced, we do not think that a proper basis has been laid for revisiting the correctness of *Research Affiliates* and *RPL Central*. If anything, the submissions advanced support the correctness of those decisions and of the principles discussed therein.

8 Further, other than in respect of one claim (claim 4 of the 413 Patent) we are not persuaded that the primary judge erred in his construction of the claims in suit, or that his Honour erred in not finding that the claims are supported by the additional innovative steps for which the appellants contend.

9 Likewise, we are not persuaded that all the claims in suit lack an innovative step for the separate reasons advanced by the respondent. However, as we will explain, we accept that, on the primary judge's findings, claims 1, 3 and 4 of the 164 Patent claim embodiments that do not involve the innovative step that his Honour found. This would be a separate reason for finding that those claims are invalid.

MANNER OF MANUFACTURE: GROUNDS 1 – 7

The invention as described

10 In this appeal, and in the proceeding below, the parties proceeded on the basis that the complete specifications and claims of the 164 Patent and the 413 Patent are (in the words of the primary judge) “largely the same”. In this appeal, as they did below, the parties advanced their respective cases by reference, primarily, to the complete specification and claims of the 164 Patent. Our summary of the description of the claimed invention proceeds on the basis of that specification and its claims.

11 The alleged invention relates to a method and apparatus for displaying information. The information relates to “entities” (exemplified as, “individuals, corporations, businesses, trusts, or any other party involved in a business or other commercial environment”), so as to provide “business intelligence”.

12 As background, the complete specification of the 164 Patent (the **specification**) discloses that there are many electronic data collections containing information about entities, including “information regarding land ownership, association with corporate entities, police records, or the like”. The specification teaches that, as this information is provided across multiple different repositories, identifying and accessing relevant information is difficult and may, for that reason, be overlooked when performing searches.

13 The specification discloses that there are a number of “federated search mechanisms” for searching across multiple data sources and aggregating the results of those searches. The specification teaches that, typically, these mechanisms are not user-friendly and have “limited abilities to data stored in different formats, making these difficult to use of unskilled individuals, and making them unsuitable for identifying business related information”.

14 The specification discloses that although methods and systems for determining and evaluating business networks for forming business relationships exist, these are not particularly useful for identifying information relating to specific entities across multiple disparate data sources.

15 The specification discloses the following further difficulties involved in searching across multiple data sources.

16 First, information is often entered in different formats and often includes inaccuracies (such as misspellings) and inconsistencies in the ways in which information, such as names and addresses, are used. This means that there are difficulties in identifying the same entity across multiple data sources.

17 The specification exemplifies this difficulty:

[0007] ... when combining information about a person from different data sources, as occurs with federated searches, it is critical that the different records do indeed refer to the same person. The decision that two or more records are likely to be the same, depends on matching different aspects in each record, such as name, address, date of birth, place of birth. The most important component is the personal name as it is always the common element across different data holdings, which inevitably will hold different combinations of personal information.

18 Secondly, there is a problem in de-duplicating records in a data collection. The specification says:

[0009] A different but closely related problem to the merging of records after a federated search is the de-duplication of records in a data collection. This is a one-off or regular pre-planned event, which assumes access to the collection and uses statistics in the collection as a whole identifies the likely candidates and either merges them, rejects them or requests user decisions. The matching of names is an integral part of this process. In name searching across one or more collection, there is no access to all the data in a collection, the answers that seem to refer to the same person need to be combined or linked and an answer is required in near real time.

19 The specification discloses known mechanisms for matching names, including the Levenshtein Distance Function for matching misspelt words. The specification teaches, however, that these techniques have not found widespread application, particularly in the field of business information matching across multiple data sources.

20 The specification exemplifies a process for displaying information relating to one or more entities, by reference to Figure 1:

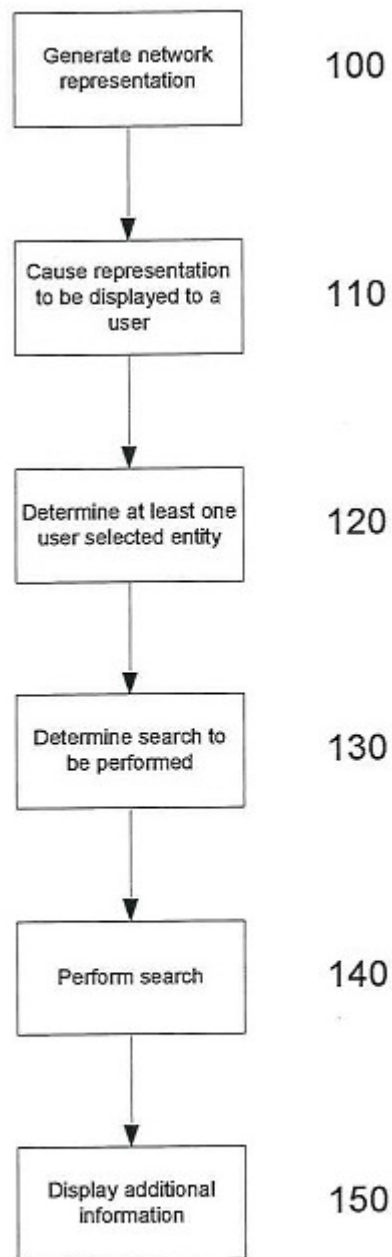


Fig. 1

21 The specification describes Figure 1 as follows:

[0045] In this example, at step 100, the electronic processing device operates to generate a network representation. The network representation is used in order to display information relating to one or more entities and relationships therebetween. In this regard, the network representation typically includes a number of nodes, with each node being indicative of a

corresponding entity, and a number of connections between nodes, with the connections being indicative of relationships between the entities.

- [0046] The entities and relationships may be of any appropriate form, depending on the preferred implementation. In one example, the system is used to provide business intelligence information, in which case the entities are typically individuals, corporations, businesses, trusts, or any other party involved in a business or other commercial environment. Additionally, entities may also represent attributes of other entities, so for example, an address of a business could be presented as an entity that is related to the business. In general the relationship will represent some form of connection between the entities, such as ownership, involvement in transactions, or the like.
- [0047] The network representation may be generated in any appropriate manner, but in one example this is achieved by having the electronic processing device ascertain information regarding entities and their relationships and then executing a predetermined procedure for generating the network representation. In this regard, the information can be determined in a number of ways depending on the preferred implementation, such as by examining internal data, or by querying one or more remote data sources, such as repositories of business information, including for example, company registers or the like.
- [0048] At step 110, the electronic processing device causes the representation to be displayed to a user. This can be achieved in any one of a number of manners, such as displaying the representation via a local display, but in one example involves generating a webpage including the representation, which can then be viewed by a user utilising a browser application or the like executed by a computer system.
- [0049] At step 120, in response to input commands provided by the user, at least one user-selected node is determined. The user-selected node corresponds to an entity of interest for the user and may be selected in any appropriate manner, such as by clicking on the network representation utilising a pointer device such as a mouse, or the like.
- [0050] At step 130, the electronic processing device determines at least one search to be performed in respect of the corresponding entity associated with the user's selected node. The process of determining a search can be achieved using any suitable mechanism. In one example, the electronic processing device will determine a number of searches associated with an entity type of the selected entity, which are previously defined and stored in memory or the like. The electronic processing device can then provide details of these to the user allowing a user to select a particular search to be performed. However, alternatively this may be achieved using any other suitable technique such as selecting a predefined search or displaying required search parameters allowing these to be provided by the user.
- [0051] At step 140, the electronic processing device performs the search. This may be achieved in any suitable manner and will depend on the search being performed, the location of stored data or the like. For example, the search may be performed of a data source located remotely to the electronic processing device, such as a remote database or other repository. In this example, the electronic processing device formats the search query and transfers this to the remote data source allowing the search to be performed.

Alternatively, the electronic processing device can utilise the search to perform a search of data stored locally, for example in a database attached to the electronic processing device.

[0052] At step 150, any additional information regarding the user-selected entity, such as additional details regarding the entity and/or other entities related to the user-selected entity, can be displayed to the user. This may be achieved in any suitable manner and can simply include displaying the results of the search to a user via a graphical user interface or the like. Alternatively, however, this can involve generating a second network representation including the additional information. This can be achieved, for example, by updating the network representation with information regarding any additional entities and/or relationships. It will be appreciated that this provides an iterative process for allowing a user to perform further searching utilising the second network representation.

[0053] Accordingly, the above-described process provides a mechanism by which a graphical network representation can be displayed to a user, allowing users to select entities of interest thereon. This can be utilised by the electronic processing device in order to determine and perform a search, allowing additional information identified by the searches to be returned to the user for viewing. This provides a straightforward mechanism for allowing users to perform searches relating to one or more related entities, and in particular, provide a graphical network representation that the user can use to select relevant entities and initiate the search. This makes it easy for an individual having little knowledge regarding different data sources and/or lacking detailed knowledge of how to search them to easily access relevant data regarding entities of interest. Additionally, the system can be utilised to rapidly search disparate data sources allowing information from a range of different sources to be included on a common network representation, thereby allowing it to be more easily visualised by the user.

22 We observe that this description is largely agnostic as to how the method should be implemented. Thus, the entities and relationships may be of “any appropriate form”; the network representation may be generated “in any appropriate manner”; information can be determined “in a number of ways depending on the preferred implementation”; for step 110, the representation displayed to the user by the electronic processing device “can be achieved in any one of a number of manners”; for step 120, the user-selected node “may be selected in any appropriate manner”; for step 130, the process of determining a search “can be achieved using any suitable mechanism” or (in respect of an example given) “achieved using any other suitable technique”; for step 140, the search performed by the electronic processing device “may be achieved in any suitable manner”; and, for step 150, the display of additional information “may be achieved in any suitable manner”.

23 At [0054] – [0063], the specification describes further “features” of the exemplified method but, apart from disclosing other ways in which the user might choose to implement the method, is not prescriptive. Indeed, it adopts similarly permissive language to the description given

at [0045] – [0053]. It is fair to say that, having identified the cardinal steps of the exemplified method, the specification leaves it to the user to implement the method in the way he or she might choose to do so, assisted by broadly-expressed and non-limiting suggestions or possibilities.

24 The balance of the description in the specification proceeds in a similar vein, albeit providing much more detail as to how the method could or might be implemented according to the user’s choice.

25 The specification provides Figure 6 as an example of a network representation according to the invention:

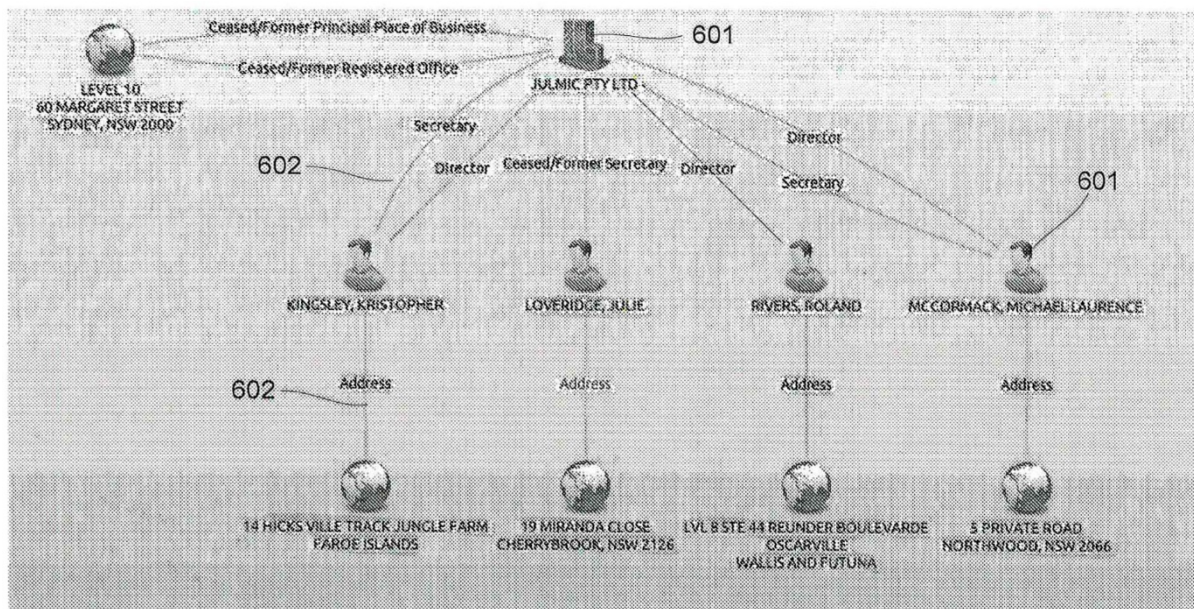


Fig. 6

26 The specification makes it clear that the processing system for implementing the method “may be formed from any suitable processing system” such as “a suitably programmed computer system, PC, web server, network server, or the like”: see [0069] of the specification; see also [0075] which, after identifying various electronic processing devices, refers to the suitably programmed processing system as being “any other electronic device, system or arrangement”.

The invention as claimed

27 The claims of the specification are directed to a method, in an electronic processing device, of displaying information relating to one or more entities (claims 1 to 3), and to an apparatus,

which includes an electronic processing device, for displaying information relating to one or more entities (claim 4).

28 As to the method claims, six steps are involved. In summarised form, they are:

- (a) generating a network representation by querying remote data sources;
- (b) causing the network representation to be displayed to a user;
- (c) in response to user input commands, determining at least one user-selected node corresponding to a user-selected entity;
- (d) determining at least one search to be performed in respect of the corresponding entity associated with the (at least one) selected node;
- (e) performing at least one search to determine additional information regarding the entity from at least one of a number of remote data sources by generating a search query; and
- (f) causing any additional information to be presented to the user.

29 Figure 1 (reproduced above) illustrates and exemplifies these steps.

30 Steps (a), (d) and (e) of the method are further characterised in claim 1. It is not necessary to provide that detail here. We have, however, reproduced claim 1 (and the other claims) in the Schedule to these reasons. It will be apparent that claim 1 does not characterise the electronic processing device which performs the method. As we have said, the specification makes it clear that “any suitable processing system” may be used.

31 Claim 2 further characterises step (e) of the method by adding a purchasing step (purchasing a report from a remote data source).

32 Claim 3 further characterises the method by introducing an additional step—presenting the additional information by modifying the network representation.

33 The apparatus of claim 4 is not characterised beyond the fact that it includes an electronic processing device and, in essence, carries out the steps of claim 1 in response to user commands. There is no further characterisation of the electronic processing device itself. All that is required in that regard is that the electronic processing device form part of the otherwise uncharacterised apparatus.

34 It is important to note that the various suggested ways in which the method can be implemented, as described in the specification, are not essential integers of the claimed invention.

35 The primary judge noted (at [25]) that the principal difference between the 164 Patent and the 413 Patent is the presence of a purchasing step in claim 1 of the 413 Patent.

The primary judge's finding

36 After recording certain principles derived from *National Research Development Corporation v Commissioner of Patents* [1959] HCA 67; 102 CLR 252 (*NRDC*) and *Research Affiliates*, and after noting three cases in which the Court has accepted that methods involving the use of a computer have provided patentable subject matter (*International Business Machines Corporation v Commissioner of Patents* (1991) 33 FCR 218 (*IBM*); *CCOM*, and *Welcome Real-Time SA v Catuity Inc* [2001] FCA 445; 113 FCR 110 (*Catuity*)), the primary judge found (at [192]) that the alleged invention claimed in the two patents brought about an artificially created state of affairs (a network of diagrams generated from querying remote data sources) which had economic significance.

37 The importance of this finding is that it harkens to the analysis of the High Court in *NRDC* when considering whether a method of using certain selective herbicides for weed control was patentable subject matter. In that case (which arose under the *Patents Act 1952* (Cth)), the Commissioner of Patents (the **Commissioner**) advocated the proposition that a “manufacture” within the meaning of the *Statute of Monopolies* is restricted to “vendible products and processes for their production” (thereby excluding all agricultural and horticultural processes): see at 268. The Commissioner’s resort to the notion of a “vendible product” appears to have been derived from observations made by Morton J in *Re G.E.C.’s Application* (1942) 60 RPC 1 (*GEC*) (at 4):

... In my view a method or process is a manner of manufacture if it (a) results in the production of some vendible product or (b) improves or restores to its former condition a vendible product or (c) has the effect of preserving from deterioration some vendible product to which it is applied. In saying this I am not attempting to cover every case which may arise by a hard and fast rule. At the moment I cannot think of any method or process which does not come within (a) (b) or (c) and yet is a manner of manufacture. Nor can I think, at the moment, of any method or process which does come within (a) (b) or (c) and yet is not a manner of manufacture. I do not intend, however, to rule out the possibility that such methods or processes may be brought to my attention hereafter. Nor do I intend to rule out the possibility that I may hereafter be convinced by arguments that the rule which I have just expressed ought to be modified.

38 When addressing the notion of a “vendible product” in *NRDC*, the High Court explained (at 276) by reference to earlier case law that, in this area of discourse, a “product” in relation to a

process is to be understood as only something in which a new and useful effect may be observed:

Sufficient authority has been cited to show that the “something” need not be a “thing” in the sense of an article; it may be any physical phenomenon in which the effect, be it creation or merely alteration, may be observed: a building (for example), a tract or stratum of land, an explosion, an electrical oscillation. It is, we think, only by understanding the word “product” as covering every end produced, and treating the word “vendible” as pointing only to the requirement of utility in practical affairs, that the language of Morton J’s “rule” may be accepted as wide enough to convey the broad idea which the long line of decisions on the subject has shown to be comprehended by the Statute.

39 Their Honours continued (at 277):

... the view which we think is correct in the present case is that the method the subject of the relevant claims has as its end result an artificial effect falling squarely within the true concept of what must be produced by a process if it is to be held patentable. This view is, we think, required by a sound understanding of the lines along which patent law has developed and necessarily must develop in a modern society. The effect produced by the appellant’s method exhibits the two essential qualities upon which “product” and “vendible” seem designed to insist. It is a “product” because it consists in an artificially created state of affairs, discernible by observing over a period the growth of weeds and crops respectively on sown land on which the method has been put into practice. And the significance of the product is economic; for it provides a remarkable advantage, indeed to the lay mind a sensational advantage, for one of the most elemental activities by which man has served his material needs, the cultivation of the soil for the production of its fruits. Recognition that the relevance of the process is to this economic activity old as it is, need not be inhibited by any fear of inconsistency with the claim to novelty which the specification plainly makes. The method cannot be classed as a variant of ancient procedures. It is additional to the cultivation. It achieves a separate result, and the result possesses its own economic utility consisting in an important improvement in the conditions in which the crop is to grow, whereby it is afforded a better opportunity to flourish and yield a good harvest.

40 Based on observations made by the Full Court in *Research Affiliates*, the primary judge reasoned in the present case that satisfaction of the two requirements for a “vendible product” discussed in *NRDC* is not enough to afford patentability to the invention that is claimed. His Honour directed himself to a distinction, accepted in *Research Affiliates* (at [104]), between mere implementation of an abstract idea in a computer, and implementation of an idea in a computer that creates an improvement in the computer. The Full Court in *Research Affiliates* attributed this distinction to observations made by Thomas J in *Alice Corporation Pty Ltd v CLS Bank International* 573 US 208 (2014) (*Alice Corporation*). Relatedly, in *RPL Central* the Full Court posed this question (at [99]): Does the claimed method merely require generic computer implementation?

41 Proceeding on this understanding, the primary judge held (at [195] – [197]):

- 195 In this case, the method disclosed in the Patents (and the apparatus) result in the computer being used to do something it has not been used to do before. But it is not clear to me that in doing so they have improved the functionality of the machine. This is because the method (and apparatus) merely involve a concatenation of three other methods, none of which is new: the use of a network representation, the querying of remote data sources and the use of a purchasing step.
- 196 It is true that I have accepted that the addition of the purchasing step has the consequence of providing an innovative step. But it does not follow that the method and apparatus involve any improvement in the computer. None of the three elements of the claims is, in itself, an improvement in the functionality of a computer. I would accept the combination of the three elements in the innovative way disclosed in the Patents certainly provides an enhanced experience for the user of the computer. But it is not self-evident that there is a necessary connexion between an enhanced user experience and an improvement in the computer. In this case, so it seems to me, the enhanced user experience results from the combination of well-known computing mechanisms. But unless that combination can itself be said to have brought about an improvement in the computer this will be beside the point.
- 197 Viewed that way, I do not see that the combination of features is of the same character as the curve generating method in *IBM*. I have more difficulty in distinguishing it from the Chinese character method in *CCOM* but that case may, perhaps, be characterised in the same way. In any event, it is difficult to see how a person could use the method and apparatus disclosed in the Patents to do something with a computer which could not already be done. An improvement in the computer does not result. For that reason I do not think that the Patents involve a manner of manufacture and they are accordingly invalid.

The appellants' submissions

42 The amended notice of appeal contains seven grounds directed to the question of whether the primary judge erred in concluding that the claimed invention does not involve a manner of manufacture. The appellants did not address these grounds seriatim. Rather, they approached the argument on appeal more broadly. They pointed to certain observations in *Research Affiliates* and *RPL Central* which, they submitted, might be inconsistent with or unsupported by earlier authority if those observations were to be read or understood in a particular way. They then addressed the present case by reference to existing authority, including *Research Affiliates* and *RPL Central*, read in accordance with how, in the appellants' submission, those cases should be understood.

43 As to the state of authority, the appellants commenced by:

- (a) noting that the scope of patentable subject matter for the purposes of Australian patent law is explained in *NRDC* and in *D’Arcy v Myriad Genetics Inc* [2015] HCA 35; 258 CLR 334 (*Myriad*);
- (b) noting that the Full Court in *Grant v Commissioner of Patents* [2006] FCAFC 120; 154 FCR 62 (*Grant*) had accepted (at [26]) that, even though a method can be called a business method, this did not prevent it from being proper subject matter for letters patent; and
- (c) directing attention to United States patent law, contending that the Supreme Court in *Bilski v Kappos* 561 US 593 (2010) (*Bilski*) and *Alice Corporation* had rejected earlier federal authority that required patents for software or business methods to be tied to a particular machine or apparatus or to transform a particular article into a different article or thing—the so-called **machine-or-transformation test**.

44 Having set this background, the appellants turned to analyse *Research Affiliates* and *RPL Central*.

45 The question in *Research Affiliates* was whether the computer implementation of an otherwise unpatentable business scheme was sufficient to make the claimed method properly the subject of letters patent. The Full Court described the alleged invention as a method of constructing data indicative of a non-capitalisation weighted portfolio of assets (shares), the method being implemented in a computer system. The series of steps (comprising the method) commenced with the receipt in the computer system of data gathered in regard to a plurality of assets.

46 In rejecting the patentability of the alleged invention, the Full Court said (at [115] – [119]):

115 The invention set out in the specification is directed to the index itself. The method of the invention is not one that has any artificial or patentable effect other than the implementation of a scheme, which happens to use a computer to effect that implementation. There is no technical contribution to the invention or artificial effect of the invention by reason of the intervention of the inventors. To take the words of *NRDC* at 268, the process does not produce “either immediately or ultimately, a useful physical result in relation to a material or tangible entity.” The claimed method, the result of the ingenuity of the inventors, does not *produce* such a result; the ingenuity is in the scheme. Again, drawing from *NRDC* at 270, there is a useful result of the claimed process but there is no physical thing “brought into existence or so affected as the better to serve man’s purposes”. There is no “physical phenomenon in which the effect, be it creation or merely alteration, may be observed” (*NRDC*

at 276).

116 The High Court (in *NRDC* at 277) spoke in terms of a separate result achieved by the claimed method that has its own economic utility consisting in the improvement. By this reasoning, the High Court directed attention to the subject matter to which the claimed method was directed, which needed to exhibit the required characteristics of a manner of manufacture to be patentable. Here, that subject matter is truly the scheme, the idea, the index. As set out in the specification it may be, and in the claimed method it is, implemented in a computer, but the ingenuity of the inventors, the end result of which is the invention, is directed to the idea, which is not patentable. That method does not have an artificial effect falling squarely within the true concept of what must be produced by a process if it is to be held patentable (*NRDC* at 277).

117 The approach to be taken to deciding whether a claimed method or product is properly the subject of letters patent must be flexible and must allow for new technologies presently unknown. The principles should be applied irrespective of the area of human endeavour and invention under consideration. However, that is not to say that any and every claimed method or process is properly the subject of a patent. Examples of exceptions have been identified, such as abstract ideas and mere schemes. There is no formula to be mechanically applied. It is a question of understanding what has been the work of, the output of, and the result of, human ingenuity, and to apply the principles that have been developed and explained so well in *NRDC*.

118 In the context of the claim, the significance lies in the content of the data rather than any specific effect generated by the computer. The computer-implementation is an essential integer of the claimed process. That is, of course, important. It is of particular importance in the assessment of, for example, novelty and infringement. However, in examining whether a claimed invention is properly the subject of letters patent, it is necessary to look not only at the integers of that claimed invention but also at the substance of that invention.

119 The claimed method in this case clearly involves what may well be an inventive idea, but it is an abstract idea. The specification makes it apparent that any inventive step arises in the creation of the index as information and as a scheme. There is no suggestion in the specification or the claims that any part of the inventive step lies in the computer implementation. Rather, it is apparent that the scheme is merely implemented in a computer and a standard computer at that. It is no part of the claimed method that there is an improvement in what might broadly be called “computer technology”.

47 The appellants submitted that the Full Court’s reference (in [119]) to an “improvement” in “computer technology” should not be understood as an improvement confined to hardware, and that the Full Court should be understood as distinguishing what would be patentable subject matter (an improvement in computer technology) from what was not patentable subject matter (a mere scheme, such as assembling a share portfolio).

48 The appellants argued, however, that, in earlier passages of its reasons for judgment, the Full Court in *Research Affiliates* placed weight on the requirement of a physical effect, particularly:

- (a) at [94] – [95], where the Full Court referred to statements in *Grant* (at [32]) about “physical” effects and consequences;
- (b) at [104], where the Full Court referred to *Alice Corporation* and noted (what the appellants said was) the machine-or-transformation test; and
- (c) at [106], where the Full Court referred to “physical effects” in relation to a computer’s memory.

49 The appellants submitted that, at [115], the Full Court in *Research Affiliates* criticised the failure of the alleged invention in that case to comply with the machine-or-transformation test, and inaptly drew upon certain passages in *NRDC* to support that criticism.

50 However, having made those submissions, the appellants argued, somewhat diffidently:

- 23 *NRDC* properly understood, does not provide support for a machine or transformation test in the sense of a requirement for a new physical device and, perhaps, neither does *Research Affiliates*. That the Court in *Research Affiliates* may not in fact have been suggesting that an improvement in hardware was required may perhaps be inferred from its apparent approval of *CCOM* and its observation at [117] of the need for flexibility to allow for new technologies presently unknown.

51 We should say at once that we do not read [115] of the Full Court’s reasons in *Research Affiliates* as stating that the invention in that case failed to comply with the machine-or-transformation test. Perhaps more importantly, we do not read the Full Court’s reasons as imposing a machine-or-transformation test, such as discussed in *Bilski*, as a requirement for the patentability of computer-implemented inventions. That said, an invention that satisfies such a test may provide patentable subject matter. The proposition rejected by the Supreme Court in *Bilski* was that a computer-implemented invention is a “process” for the purposes of the *Patent Act*, 35 USC. § 101 *only* if the invention is tied to a particular machine or apparatus, or it transforms a particular article into a different state or thing.

52 The appellants submitted that *RPL Central* was “more emphatic in this respect”. We take this submission to mean that the Full Court in *RPL Central* was more emphatic than the Full Court in *Research Affiliates* in rejecting the existence of a new physical device as a requirement for the patentability of computer-implemented inventions. Even so, the appellants referred to certain passages in *RPL Central* which, as a matter of argument, they suggested signified

possible acceptance by the Full Court of the need for a new physical device or a requirement that the alleged invention reside in the working of computer hardware.

53 The appellants also submitted that certain passages in *RPL Central* might convey that the Full Court was not treating manner of manufacture, novelty, inventiveness and utility as distinct requirements for a patentable invention.

54 The appellants then turned to the instant case, submitting that the primary judge correctly concluded that the alleged invention satisfied the twin requirements referred to in *NRDC*: see [36] above. The appellants submitted that each of the following steps was an “artificially created state of affairs”:

- (a) the interrogation of remote data sources;
- (b) the generation and display of the network representation;
- (c) the interaction with the network node to initiate a further search;
- (d) the determination that the results thereby produced relate to the same entity as the one produced from the first search (the contention that this is a step of the claimed method is an issue in this appeal); and
- (e) the display of the results of that search.

55 The appellants submitted that this is enough to afford patentability in the present case, and that the primary judge erred in finding otherwise. In particular, the appellants submitted that, at [193], the primary judge erred in directing his attention to whether the alleged invention results in “an improvement in the computer”. The appellants advanced, essentially, two reasons for this error.

56 First, the appellants submitted that, by expressing doubt at [195] about whether the alleged invention had “improved the functionality of the machine”, the primary judge had erroneously incorporated the machine-or-transformation test into his consideration.

57 Secondly, the appellants submitted that the primary judge’s reference in the same paragraph to the method involving a concatenation of three known methods misstated the claim integers; impermissibly incorporated the concept of inventive step into his consideration of whether the method was a manner of manufacture; and failed to consider that a working interrelationship of integers can provide a patentable combination.

58 The appellants submitted that the correct question is whether the claims define the content of information (indicative of a mere scheme) or the functionality of a computer, the latter (on the appellants' argument) providing patentable subject matter.

59 In this connection, the appellants submitted that the claimed method is not defined by reference to the content of information that is collected, or information itself, but to a method of identifying information consisting of particular functions undertaken by the computer system. They submitted that searching remote data sources, generating a network representation, selecting a node, conducting a further search, and requiring that it be determined that the additional information relates to the same entity (once again, a contentious question in this appeal), involves invention or ingenuity in the way in which the computer is used.

60 The appellants submitted that these steps have the character of specific computer functionality, not merely a scheme defined by the content of information in which the computer is a mere intermediary. They submitted that it is this "computer functionality" which gives rise to an artificially created state of affairs.

61 The appellants submitted, therefore, that the claims in suit are not, in their character, claims to a mere scheme, or a method of carrying on a business, or an abstract idea. Rather, they are for a method, embodied in computer technology, that can be used in a business (echoing the distinction drawn by Heerey J in *Catuity* at [128]).

62 The appellants submitted that, contrary to the primary judge's conclusion at [196] – [197], the claimed method is a combination of functions performed by computer, not merely an "enhanced user experience". They submitted that the interrelated combination of features is exemplified at, for example, [0053] – [0065] and [0105] – [0120] of the specification. According to the appellants, the computer is not merely an "intermediary" between the user and the information.

63 The appellants also submitted that the notion of a manner of manufacture does not import a requirement of improved efficiency.

64 Finally, the appellants submitted that the present case is not distinguishable in principle from *CCOM*.

The respondent's and interveners' submissions

65 It is convenient at this point to record the salient aspects of the submissions advanced by the respondent, the Commissioner (who appeared as of right under r 34.23 of the *Federal Court Rules 2011* (Cth)), and the Institute of Patent and Trade Mark Attorneys of Australia (**IPTA**) (who sought leave to intervene in the appeal). At the commencement of the hearing of the appeal, we reserved (for determination in these reasons) the question of whether, and to what extent, leave should be granted to IPTA to intervene.

66 The respondent submitted that, properly characterised, the claimed method is no more than an instruction to apply an abstract idea using generic computer technology. This is not a manner of manufacture and, thus, patentable subject matter according to the principles which have been developed for the application of section 6 of the *Statute of Monopolies*. The primary judge did not err in so finding.

67 The respondent submitted that the primary judge correctly applied *Research Affiliates* and *RPL Central* which, themselves, had been correctly decided. The respondent submitted that these cases recognised that the correct approach, which the primary judge adopted, is to characterise the claimed invention as a matter of substance. It is not enough for patentability that the alleged manner of manufacture possess an “artificial effect of economic utility”. This was correctly recognised in *Research Affiliates* and *RPL Central* and appreciated by the primary judge at [193], whose analysis of the question of patentability proceeded accordingly.

68 The respondent submitted that the primary judge's references to, and inquiry into whether, the claimed invention resulted in “an improvement in the computer” or “improved the functionality of the machine” were not an invocation of the machine-or-transformation test but, rather, a borrowing from the language employed in *Research Affiliates* and *RPL Central* to illustrate the concepts discussed in earlier cases to differentiate between unpatentable schemes and abstract ideas on the one hand, and patentable subject matter on the other.

69 The respondent submitted further that, in considering whether the claimed invention is a manner of manufacture, the primary judge did not stray into an impermissible consideration of “newness” or “inventiveness”. The respondent submitted that this allegation by the appellants mischaracterises the primary judge's reasoning and findings on the relevant question.

70 The Commissioner's submissions were, largely, in the same vein. The Commissioner submitted that, in determining whether an invention is a manner of manufacture, attention must

be directed to its substance, not its form. In the context of computer-implemented methods, a range of considerations may be relevant to this question, but a key consideration will be whether the alleged ingenuity resides in the way in which the method is implemented in the computer (in which case, the alleged invention *may* be patentable) or whether the ingenuity lies only in an unpatentable method or scheme (in which case, the alleged invention will *not* be patentable).

71 The Commissioner submitted that, properly understood, *Research Affiliates* and *RPL Central* represent orthodox applications of the developed principles of “manner of manufacture” to computer-implemented methods. She submitted that the appellants’ attack upon these cases is “unwarranted”. The Commissioner further submitted that the reasoning in each case is consistent with *NRDC* (which the Commissioner described as the locus classicus on “manner of manufacture”) and *Myriad*, and that the primary judge was correct to find that their application in the present case led to the conclusion that the claimed invention is not a manner of manufacture.

72 IPTA’s submissions took issue with the Commissioner’s statement that, in considering the patentability of computer-implemented methods, a key consideration is determining where the alleged ingenuity lies. IPTA submitted that this statement is “misconceived” because it intrudes questions of novelty and inventive step into the question whether the invention is a manner of manufacture; it suggests that the way in which the method is implemented in the computer is decisive and directs attention away from the method as claimed; and it suggests that a method characterised as a business method or a scheme is unpatentable, whereas it is only methods or schemes that are no more than a method of doing business or an abstract idea (with no practical application or effect) that are not patentable.

73 IPTA submitted that the Commissioner’s “misconceptions” had become established practice when examining patent applications. IPTA said that this was of “central concern to IPTA and its members’ clients seeking patent protection for their inventions”. IPTA said, further, that these “misconceptions” are reflected in the Australian Patent Office Manual of Practice and Procedure (the **Manual**) on which the Commissioner’s delegates rely for authoritative guidance in the examination of patent applications. IPTA argued that this has “led ... to a confused state of affairs in the examination of computer-implemented inventions, and will cause examination of many such applications to miscarry”.

74 IPTA submitted that the Commissioner’s approach was a misapplication of *Research Affiliates* and *RPL Central*. If, however, *Research Affiliates* and *RPL Central* supported the propositions it criticised as “misconceived” then, IPTA submitted, those cases should not be followed.

75 IPTA then surveyed a number of decisions of the Patent Office it considered to reflect the Commissioner’s misconceptions.

76 We do not propose to opine on the correctness of the Commissioner’s decisions to which IPTA referred. Those decisions are not before us in this appeal. Similarly, we do not propose to embark on a consideration of what could be described as IPTA’s editorial comments on the drafting of the Manual. For these reasons, we grant leave to IPTA to intervene, but only for the purpose of advancing [1] – [2] and [6] – [11] of its written outline of submissions.

Analysis

77 We do not see this appeal as raising any significant question of principle, despite the fact that the appellants and IPTA have made oblique attacks on the correctness of *Research Affiliates* and *RPL Central* by resort to possible interpretations which, ultimately, they dismiss as misinterpretations. Having regard to the particular submissions made by the parties and the interveners on this question, we do not think that the correctness of those decisions is seriously in doubt. In truth, the burden of this appeal lies in whether the primary judge correctly applied them to the case at hand. This appeal does not provide the occasion for this Court to set out the metes and bounds of patentable computer-implemented inventions, assuming that be an appropriate task: see, in that regard, the cautionary observations of the plurality in *Myriad* at [18].

78 We commence our analysis by noting certain propositions which are not, and cannot be, in dispute.

79 First, in *NRDC*, the High Court made plain that, in the context of considering whether a claimed invention is a manner of manufacture, the inquiry is not into the meaning of words but into the breadth of a concept which the law has developed by its consideration of the text and purpose of the *Statute of Monopolies*. The High Court said (at 269):

... One may remark that although the Statute spoke of the inventor it nowhere spoke of the invention; all that is nowadays understood by the latter word as used in patent law it comprehended in “new manufactures”. The word “manufacture” finds a place in the present Act, not as a word intended to reduce a question of patentability to a question of verbal interpretation, but simply as the general title found in the *Statute of Monopolies* for the whole category under which all grants of patents which may be

made in accordance with the developed principles of patent law are to be subsumed. It is therefore a mistake, and a mistake likely to lead to an incorrect conclusion, to treat the question whether a given process or product is within the definition as if that question could be restated in the form: “Is this a manner (or kind) of manufacture?” It is a mistake which tends to limit one’s thinking by reference to the idea of making tangible goods by hand or by machine, because “manufacture” as a word of everyday speech generally conveys that idea. The right question is: “Is this a proper subject of letters patent according to the principles which have been developed for the application of s. 6 of the *Statute of Monopolies*?”

80 Thus, when determining whether a claimed invention is a manner of manufacture, a question of characterisation of the invention is involved. However, the question of characterisation is the broad question posed by the High Court: whether the invention is proper subject matter according to the principles developed for the application of section 6 of the *Statute of Monopolies*.

81 Secondly, this question of characterisation is to be addressed as a matter of substance, not merely as a matter of claim form. In *Myriad*, Gageler and Nettle JJ so held at [145], adopting an observation by the Full Court to that very effect in *Research Affiliates* at [107]. The plurality in *Myriad* at [87] – [88] and [94] also emphasised the need to approach the characterisation of the invention as a matter of substance, saying:

94 Although it may be said in a formal sense that the invention as claimed, referring to isolated nucleic acids, embodies a product created by human action that is not sufficient to support its characterisation as a manner of manufacture. The substance of the invention as claimed and the considerations flowing from its substance militate against that characterisation. To include it within the scope of a “manner of manufacture” involves an extension of that concept, which is not appropriate for judicial determination. ...

82 Thirdly, the plurality in *Myriad* accepted (at [21]) that the analysis of the invention in *NRDC* by reference to the notion of a “vendible product” can be explained because of “the qualities of the invention before the court”. As we have also noted, the Commissioner’s argument in *NRDC* was directed to an application of the “rule” articulated by Morton J in *GEC*. It is not surprising therefore that the High Court in *NRDC* discussed the question before it in terms which reflected the substance of the arguments which the parties had, in fact, advanced or addressed. However, the High Court clearly articulated the broad scope to be given to the notion.

83 Fourthly, three propositions emerge from [20] of the reasons of the plurality in *Myriad* that are particularly pertinent to the present appeal. The first is that the terminology of an “artificially created state of affairs of economic significance”, as used in *NRDC*, was not intended to be, and should not be seen as, a definition of “manner of manufacture” given that, in the same case,

the High Court “had denounced the idea of an exact formula”. The second proposition is that the terminology is not an exhaustive formulation of the concept of manner of manufacture. The third and related proposition is that satisfaction of such a formulation does not, in any event, mandate a finding of inherent patentability, although “[this] is not to say that it will not suffice for a large class of cases in which there are no countervailing considerations”.

84 Against the background of these propositions, the plurality in *Myriad* at [21] made specific reference to *CCOM* where the Full Court had said (at 295):

The *NRDC* case at 275-277 requires a mode or manner of achieving an end result which is an artificially created state of affairs of utility in the field of economic endeavour. In the present case, a relevant field of economic endeavour is the use of word processing to assemble text in Chinese language characters. The end result achieved is the retrieval of graphic representations of desired characters, for assembly of text. The mode or manner of obtaining this, which provides particular utility in achieving the end result, is the storage of data as to Chinese characters analysed by stroke-type categories, for search including “flagging” (and “unflagging”) and selection by reference thereto.

85 The plurality said that this formulation, like Morton J’s vendible product “rule”, should be taken as a guide rather than as a rigid formula.

86 In a similar vein, Gageler and Nettle JJ said (at [125]) that the High Court’s references in *NRDC* to “artificial state of affairs” and “economic utility” in the passage we have quoted at [39] above are not to be taken as suggesting that these are the only considerations relevant to whether a claimed invention is a manner of manufacture for the purposes of the Act. At [126], their Honours explained that a manner of manufacture must be “something more than a mere discovery” and that “(t)he essence of invention inheres in its artificiality or distance from nature”. While these remarks were no doubt made with the particular invention in that case in mind, they are no less apposite to all cases where patentable subject matter is to be distinguished from avowedly unpatentable subject matter, including where the latter is mere abstract information.

87 In *Grant*, the patentee argued that his claimed method (a method of asset protection which utilised a trust, a gift, a loan and a security) was a manner of manufacture because it involved the creation of an artificial state of affairs with economic utility. The Full Court did not accept that characterisation of the claimed method and concluded that a “physical effect in the sense of a concrete effect or phenomenon or manifestation or transformation” was required in order

to support its patentability: see at [32]. The claimed method did not exhibit such an effect. In reasoning to that conclusion, the Full Court said at ([30] – [32]):

- 30 Contrary to Mr Grant’s submission, the method of his patent does not produce any artificial state of affairs, in the sense of a concrete, tangible, physical, or observable effect. It is quite different from the invention in *Catuity*, which was a method involving components such as smart cards and point of sale terminals, and produced tangible results in the writing of new information to the Behaviour file and the printing of the coupon (at [128]). While there was not a physically observable end result in the sense of a tangible product, the invention involved an application of an inventive method where part of the invention was the application and operation of the method in a physical device. Within the concept of *NRDC* an artificial state of affairs was produced, a state of affairs created by the application or effect of the method.
- 31 What Mr Grant’s method results in is at best an abstract, intangible situation, namely that a hypothetical unsecured creditor who recovered judgment against a user of the method could not levy against the user’s assets to the extent they were subject to the charge. (We say at best because the application of the *Bankruptcy Act 1966* (Cth) preference provisions and the laws against fraudulent conveyances have not been considered in this litigation; see *Trustees of the Property of Cummins (a bankrupt) v Cummins* (2006) 224 ALR 280 at [21]-[24].)
- 32 A physical effect in the sense of a concrete effect or phenomenon or manifestation or transformation is required. In *NRDC*, an artificial effect was physically created on the land. In *Catuity* and *CCOM* as in *State Street* and *AT&T*, there was a component that was physically affected or a change in state or information in a part of a machine. These can all be regarded as physical effects. By contrast, the alleged invention is a mere scheme, an abstract idea, mere intellectual information, which has never been held to be patentable, despite the existence of such schemes over many years of the development of the principles that apply to manner of manufacture. There is no physical consequence at all.

88 We do not read these passages as straying from the propositions we have drawn from *Myriad*. It can be seen that, in these paragraphs, the Full Court was seeking to explain why a mere “abstract, intangible situation” is not a manner of manufacture, and hence not a patentable invention. Although the Full Court referred to the need for a “physical effect”, it is abundantly clear that their Honours used the word “physical” in a very broad or extended sense. It is apparent that their Honours did so in an endeavour to demark, as best as words can, the conceptual distinction between, on the one hand, a manner of manufacture and, on the other, “a mere scheme, an abstract idea, mere intellectual information, which has never been held to be patentable ...”: see at [32]. We see the Full Court’s reference to, and use of, “physical effect” to be in no way different to the High Court’s reference to, and use of, “physical phenomenon” in the passage from *NRDC* we have quoted at [38] above.

89 The appellants submitted that there is an apparent inconsistency between the conclusion of the Full Court in *Grant* and “the principle in *CCOM* and *Catuity*”. We see no inconsistency. Indeed, in *Grant* the Full Court accepted (at [32], quoted above) that *CCOM* and *Catuity* both concerned methods where a component was physically affected or a change in state or information in a part of a machine was involved. In doing so, their Honours made clear that the requirement of a “physical effect” did not mean that the method must result in a tangible product as such.

90 But perhaps more importantly for present purposes, the reasons of the plurality in *Myriad* make it perfectly clear that *CCOM* should not be taken as laying down a rule or rigid formula to be adhered to when characterising the claimed invention, although recourse to the terminology of an “artificially created state of affairs of economic significance” can be taken as a guide when analysing the true character of the invention that is claimed. Even then, it does not follow that the demonstration of a physical effect mandates patentability.

91 The decisions, and the language used, in *Research Affiliates* and *RPL Central* must be understood likewise. In each case, the Full Court was seeking to describe the conceptual distinction between a manner of manufacture and an unpatentable abstraction. In each case, the Full Court was explaining that a claimed method that is unpatentable does not change its legal character merely because the method is implemented by the instrumentality of a computer.

92 Thus, in *Research Affiliates* the Full Court also said (at [107]):

107 The determination whether the claimed invention is truly “an artificially created state of affairs” in satisfaction of *NRDC* is made not by some mechanistic application of the criterion of artificiality or physical effect, but by an understanding of the claimed invention itself. The invention is to be understood as a matter of substance and not merely as a matter of form.

93 This statement is consonant with the approach subsequently approved by the High Court in *Myriad*. Indeed, as we have noted at [81] above, the correctness of this statement by the Full Court was acknowledged by Gageler and Nettle JJ.

94 In considering whether the mere implementation by a computer of an abstract idea or scheme is enough to transform unpatentable subject matter into patentable subject matter, the Full Court in *Research Affiliates* (at [115]) resorted to the language of “artificial” or “physical” effects, “technical contribution” and suchlike expressions, as used by the High Court in *NRDC*. By resorting to this language, the Full Court was doing no more than explaining that the

claimed method in that case did not transcend, as a matter of substance, what remained an abstract idea or mere information of a kind that has never been considered to be patentable subject matter under Australian law.

95 In *RPL Central*, which was decided after *Myriad*, the Full Court again dealt with the question of whether the computer implementation of an unpatentable abstract idea is sufficient to confer patentable subject matter. At [96], the Full Court said:

96 A claimed invention must be examined to ascertain whether it is in substance a scheme or plan or whether it can broadly be described as an improvement in computer technology. The basis for the analysis starts with the fact that a business method, or mere scheme, is not, per se, patentable. The fact that it is a scheme or business method does not exclude it from properly being the subject of letters patent, but it must be more than that. There must be more than an abstract idea; it must involve the creation of an artificial state of affairs where the computer is integral to the invention, rather than a mere tool in which the invention is performed. Where the claimed invention is to a computerised business method, the invention must lie in that computerisation. It is not a patentable invention simply to “put” a business method “into” a computer to implement the business method using the computer for its well-known and understood functions.

96 After noting that the respondent in that case did not claim any invention or ingenuity in any program or operation of a computer, or implementation by a computer to operate the method (although the method did utilise the speed, processing power and ability of a computer), the Full Court concluded (at [113]) that the claimed invention was, in substance, “a scheme or a business method that is not properly the subject of letters patent”.

97 Further, after noting that *Myriad* had elaborated on the principles to be applied when considering whether a claimed invention is a manner of manufacture, the Full Court said (at [116]):

116 As their Honours observed in [*Myriad*] (at [18]), the question whether a claim is as to patentable subject matter in accordance with the principles developed for the application of s 6 of the *Statute of Monopolies* is answered according to “a common law methodology under the rubric of ‘manner of manufacture’”, as exemplified by *NRDC*. In this context, their Honours emphasised (at [20]) that, while satisfaction of an “artificially created state of affairs of economic significance” as stated in *NRDC* may “suffice for a large number of cases in which there are no countervailing considerations”, this terminology is not to be treated as a formula exhaustive of the concept of manner of manufacture, or a formula which alone captures the breadth of the ideas to which effect must be given. Similarly, Gageler and Nettle JJ noted (at [125]) that the holding in *NRDC* does not mean that an “artificial state of affairs” and “economic utility” are the only relevant considerations in this context. However, the majority and Gageler and Nettle JJ acknowledged the usefulness of such characterisation in appropriate circumstances.

98 The Full Court continued by explaining its use of language (at [117]):

117 Where we refer in these reasons to the terminology in *NRDC*, we do so to explain the qualities of the invention being considered, as was done in *Research Affiliates* and in *CCOM* — as acknowledged in [*Myriad*] at [21] per French CJ, Kiefel, Bell and Keane JJ and by Gordon J at [273]. In this case, as in *Research Affiliates*, reference to the terminology used in *NRDC* is apposite, although, as we have explained, not conclusive of patentability.

99 Turning to the present case, we accept the respondent’s submission that the method claims in suit are, in truth, no more than an instruction to apply an abstract idea (the steps of the method) using generic computer technology. The appellants endeavoured to explain why the claimed method falls within the notion of an artificially created state of affairs by attributing computer functionality to the method: the computer (or, in the language of the claims, the electronic processing device) searches remote data sources; the computer generates a network representation; and the computer responds to a user’s selection to conduct a further search. The appellants also attributed computer functionality to the method by the computer determining additional information relating to the *same* entity. As we have previously noted, this involves the contentious question of “entity matching”—a step which the primary judge found was not a step in the claimed method. We discuss this below when dealing with the grounds relating to innovative step. But even if for present purposes “entity matching” is taken to be a step in the claimed method, neither it nor the other steps, individually or collectively, amount to anything more than a method in which an uncharacterised electronic processing device (for example, a computer) is employed as an intermediary to carry out the method steps—where the method itself is claimed in terms which amount to no more than an abstract idea or scheme.

100 In oral submissions, the appellants sought to make much of the fact (if it be a fact) that the claimed method cannot be implemented using “generic software”. The difficulty with this submission is that the claims in suit do not secure, as an essential feature of the invention, any particular software or programming that would carry out the method. It is left entirely to those wishing to use the method to devise, and then to implement, a suitable computer program for that purpose. As we have said, all that the specification teaches is that the processing system be “suitably programmed”.

101 As the oral argument developed during the appeal, the appellants submitted that the claimed method is, itself, a high-level description of a computer program. We do not accept this characterisation. If approached from this point of view, the method is really an idea for a computer program, it being left (as we have said) to the user to carry out that idea in an

electronic processing device. Indeed, the method, as claimed, is no different in principle to the methods claimed in *Research Affiliates* and *RPL Central*. Patentable subject matter is not provided simply because the method is a “method ... in an electronic processing device”, which itself is not characterised. To find otherwise would be to elevate form over substance.

102 This conclusion applies equally to the apparatus claims which provide no more than an uncharacterised apparatus (which includes an uncharacterised electronic processing device) to carry out the steps of the abstract method.

103 As we have noted, the primary judge accepted (at [192]) that the method brings about an artificially created state of affairs in the sense that network diagrams are generated from querying remote data sources, and that this state of affairs is economic in character. However, he reasoned that this alone would not be enough to constitute the claimed method as a manner of manufacture. His Honour did so in reliance on the following passage from *Research Affiliates* (at [102]):

102 ... the relevant inquiry is not into the form of the words to determine whether what is claimed is properly the subject of a patent. If a process is to be patentable, it must offer some advantage which is material, in the sense that the process belongs to a useful art. The characterisation of patentability by reference only to the description in *NRDC* of a product which consists of an artificially created state of affairs of economic significance was part of the High Court’s reasoning but did not represent a sufficient or exhaustive statement of the circumstances in which a claimed invention is patentable.

104 Once again, this passage is consonant with the approach approved in *Myriad*. His Honour did not err, therefore, in adopting that approach.

105 As we have recorded (at [55] – [61] above), the appellants criticised the primary judge for inquiring whether the claimed method results in “an improvement in the computer”. This was an allusive reference by his Honour to a statement made in *Research Affiliates* that there is a distinction between mere implementation of an abstract idea in a computer and the implementation of an abstract idea that creates an improvement in the computer. The context in which this distinction is expressed is found at [104] – [106] in *Research Affiliates*:

104 As Thomas J said in *Alice Corporation*, there is a distinction, between mere implementation of an abstract idea in a computer and implementation of an abstract idea in a computer that creates an improvement in the computer. There is also a distinction between, on the one hand, a method involving components of a computer or machine and an application of an inventive method where part of the invention is the application and operation of the method in a physical device and, on the other, an abstract, intangible situation which is a mere scheme, an abstract idea and mere intellectual information.

105 A useful description of the distinction to be drawn was set out by Lourie J in *Bancorp Services LLC v Sun Life Assurance Company of Canada* 687 F (3d) 1266 at 1277, 1278 (2012) (citations omitted):

“Modern computer technology offers immense capabilities and a broad range of utilities, much of which embodies significant advances that reside firmly in the category of patent-eligible subject matter. At its most basic, however, a ‘computer’ is ‘an automatic electronic device for performing mathematical or logical operations’. As the Supreme Court has explained, ‘[a] digital computer ... operates on data expressed in digits, solving a problem by doing arithmetic as a person would do it by head and hand’. Indeed, prior to the information age, a ‘computer was not a machine at all’; rather, it was a job title: ‘a person employed to make calculations’. Those meanings conveniently illustrate the interchangeability of certain mental processes and basic digital computation, and help explain why the use of a computer in an otherwise patent-ineligible process for no more than its most basic function — making calculations or computations — fails to circumvent the prohibition against patenting abstract ideas and mental processes. As we have explained, ‘[s]imply adding a “computer aided” limitation to a claim covering an abstract concept, without more, is insufficient to render the claim patent eligible’.

To salvage an otherwise patent-ineligible process, a computer must be integral process [sic], a computer must be integral to the claimed invention, facilitating the process in a way that a person making calculations or computations could not.”

(Emphasis added.)

106 The use of a computer necessarily involves the writing of information into the computer’s memory. This means that there are a number of “physical effects” in the sense of transformed data and memory storage during the claimed process. The claimed index in this case is data that exist in computer-readable form. The question is whether this is sufficient to make the claimed method properly the subject of letters patent. ...

106 The passage in Thomas J’s reasons when delivering the opinion of the Supreme Court of the United States in *Alice Corporation* is:

Considered “as an ordered combination,” the computer components of petitioner’s method “ad[d] nothing ... that is not already present when the steps are considered separately.” *Id.*, at 79. Viewed as a whole, petitioner’s method claims simply recite the concept of intermediated settlement as performed by a generic computer. See 717 F. 3d, at 1286 (Lourie, J., concurring) (noting that the representative method claim “lacks *any* express language to define the computer’s participation”). The method claims do not, for example, purport to improve the functioning of the computer itself. See *ibid.* (“There is no specific or limiting recitation of ... improved computer technology ...”); Brief for United States as *Amicus Curiae* 28-30. Nor do they effect an improvement in any other technology or technical field. See, e.g., *Diehr*, 450 U.S., at 177-178. Instead, the claims at issue amount to “nothing significantly more” than an instruction to apply the abstract idea of intermediated settlement using some unspecified, generic computer. *Mayo*, 566 U.S., at 79. Under our precedents, that is not “*enough*” to transform an abstract idea into patent-eligible invention. *Id.*, at 77.

107 The primary judge's inquiry at [193] as to whether implementation of the claimed method results in "an improvement in the computer" must be seen in the context of the corresponding and more fulsome discussion in *Research Affiliates* to which his Honour alluded. As can be seen, the discussion in *Research Affiliates* was directed to elucidating the distinction between mere schemes, abstract ideas and intellectual information on the one hand, and on the other, possibly patentable, subject matter.

108 This inquiry must also be seen in the context of his Honour asking concurrently and alternatively the question posed in *RPL Central*: does the claimed method "merely require generic computer implementation"? This last-mentioned aspect of the primary judge's inquiry is significant because if, on proper analysis, and as a matter of substance, the claimed method "merely require[s] generic computer implementation" (as in our view it does) then the method cannot be a manner of manufacture. We do not understand the appellants to contend otherwise.

109 Thus, his Honour's reference at [193] to whether the claimed method results in "an improvement in the computer" is to be understood as an inquiry into and search for possibly patentable subject matter by reference to a touchstone of such subject matter. So, too, should the primary judge's inquiry at [195] as to whether the claimed method results in an improvement in "the functionality of the machine".

110 So understood, we see no error in his Honour's approach. Indeed, the appellants' submissions advance the proposition that patentable subject matter does exist in respect of the claimed methods *because* of computer functionality. However, contrary to the appellants' submission, we do not read the terms in which the primary judge couched this inquiry as signifying that his Honour was seeking to import any particular test into his consideration. In particular, we do not understand his Honour to have been positing a hardware-specific test, as the appellants suggested in oral submissions. The primary judge was simply directing his mind to whether the claimed invention was something more than mere "generic computer implementation" of an otherwise abstract idea.

111 The appellants submitted that, by describing (at [195]) the claimed method as a concatenation of three other known methods, the primary judge misstated the integers of the claims and failed to consider the working interrelationship of the claimed combination. These submissions proceed from a somewhat over-meticulous analysis of this part of his Honour's reasons and, perhaps, a misunderstanding of the task his Honour was setting himself. As we have said, in this part of his reasons the primary judge is to be understood as inquiring into and searching

for possible patentable subject matter, such that the claimed method was something more than “generic computer implementation” of an abstract idea. It can be accepted readily that the three methods of the concatenation to which his Honour referred might not, in terms, encompass all the individual steps of the claimed method. However, we do not read his Honour’s reasons as suggesting that they did. We also do not read his Honour’s reasons as focusing on individual features of the claimed method at the expense of considering the effect of their combination.

112 It is true that, at [194] – [197], the primary judge made a number of statements about whether the method and apparatus described in the specifications resulted in a computer being used to do something it has not been used to do before. His Honour also described the “enhanced user experience” afforded by the invention as resulting from a “combination of well-known computing mechanisms”. We accept that his Honour’s use of this language suggests that other, conceptually distinct elements of patentability might have intruded into his Honour’s consideration of whether the claimed method and apparatus were directed to a manner of manufacture: see, for example, the caution expressed in *CCOM* at 291, which was repeated in *Research Affiliates* at [111]. But, at the end of the day, we see no error in his Honour’s ultimate conclusion that no manner of manufacture is involved in the method and apparatus as claimed.

113 For these reasons, Grounds 1 – 7 of the appeal fail.

CONSTRUCTION: GROUNDS 8 – 13

Introduction

114 The significance of these grounds of appeal is that they are precursors to the appellants’ challenge that the primary judge erred in not finding that the invention as claimed is supported by additional innovative steps. Two issues are involved: (a) the meaning of “remote data sources” as used, for example, in claim 1 of the 164 Patent; and (b) whether the claimed method includes, as an essential integer, an “entity matching” step.

Remote data sources

115 The claimed method includes the step of querying remote data sources for the purpose of generating a network representation. The method also includes a step of searching from at least one of a number of remote data sources to determine additional information regarding a user-selected entity.

116 In the proceeding below, the parties agreed that “remote data sources” was a technical expression that referred to data sources that were, in some way, separate from the system querying those sources. As the primary judge recorded (at [30(b)]):

... [A remote data source] could be part of the same logical system as the querying system when that system, for example, was distributed over several machines. It might be physically differently located; for example, the query may originate on a local area network but the data source might be on a wide area network ... Alternatively, it could mean a data source situated in a different logical system altogether such as, for example, that controlled by a third-party.

117 This finding was based on the agreement of Professor Grundy (who was called by the appellants) and Professor Takatsuka (who was called by the respondent). However, as the primary judge also recorded (at [32]), the appellants contended (and the respondent disputed) that, in the context of the claimed invention, a remote data source is limited to a data source operating under the control of a third party.

118 The appellants’ construction was advanced through Professor Grundy, who drew on various passages in the specification (and corresponding passages in the specification of the 413 Patent) (together, the **specifications**) to support his view. Professor Grundy also argued that the claimed method included an entity matching step, which (so the argument ran) meant that external organisations *must* be involved.

119 The primary judge was unpersuaded by these arguments. His Honour’s reasoning may be summarised as follows:

- (a) The specifications’ descriptions of prior art problems do not entail that the claims are limited to third-party-controlled sources, although they may include them: at [34].
- (b) Even though the expression “direct database access” is also used in the specifications and might signify a database located within an organisation’s network environment, this did not mean that the database could not be, equally, a “remote data source” for the purposes of the claimed method: at [35] – [36].
- (c) The fact that the specifications describe components for integrating “remote” and “local” data does not mean that the data could not be, in each case, from “remote data sources” for the purposes of the claimed method: at [37] – [39].

- (d) Even assuming entity matching is picked up in the claimed method, it does not follow that entity matching only involves data sourced from third parties: at [40].
- (e) Professor Grundy's construction is based on the assumption that all the databases within an organisation are such that entity matching and disambiguation are *not* necessary. There is no legitimate basis on which that assumption should be accepted as a universal truth: at [41] – [42].
- (f) Even though certain passages in the specification of the 164 Patent refer to examining or searching locally stored data and remote data sources, this only means that the invention can be applied to arrangements involving both local and remote data sources: at [43] – [47].

120 Thus, the primary judge concluded that it is not necessary that a “remote data source” form part of a different logical system or be “under the control of a different organisation”: see at [48].

121 The appellants' submissions on appeal on this issue reflect the contentions they advanced unsuccessfully before the primary judge. They submitted that the specifications of each patent distinguish between internal or locally stored data, and querying one or more remote data sources which, they said, must be controlled by third parties.

122 The appellants referred to the specifications' descriptions of the prior art and submitted that, on one hand, where the controller of the search system does not control the data source, it is necessary to develop a solution which is capable of accommodating disparate data. On the other hand, where the controller of the search system does control the data source, this “functionality” is not necessary because the disparate data can be manually manipulated to make it uniform. While the latter proposition might be true in a given case, we note that the passages of the specification cited by the appellants for the first proposition do not refer to the controller of the search system not controlling the data source. This is simply the appellants' gloss on the descriptions that are given.

123 The appellants also submitted that the “spatial or geographic sense of ‘remote’” advanced by the respondent is “not supported” by the specifications or the claim language, which do not disclose any technical significance of the “distance” of the data source from the search system. The appellants submitted further that the “electronic processing device” could itself be distributed over a number of physical components, so that the spatial displacement of the data source alone could not make it remote from the system itself.

124 We are not satisfied that the primary judge erred in the conclusion he reached. While the specifications might accommodate the particular reading which the appellants give them, we do not accept that the description of the invention that is given is so limited. We do not accept, for example, that the specifications limit their consideration of the deficiencies of the prior art to deficiencies that only arise where remote data sources are under the control of third parties; nor do other aspects of the descriptions mandate that the remote data sources must be under the control of third parties. More importantly, there is nothing in the claims themselves which limits the method to searching data sources that are under the control of third parties. We see no reason why the expression “remote data sources”, as used in the claims, does not bear the broad technical meaning on which the expert witnesses agreed.

125 For these reasons, Grounds 8 – 10 of the appeal fail.

Entity matching

126 At various places, the specification speaks of the importance of ensuring that the results of searches correspond to the existing entity in respect of whom the search is conducted. The parties referred to this as “entity matching”. In broad terms, it can be understood as matching an entity identified by one data source with an entity identified by another data source. The specification describes various processes by which, “typically”, this can be done, sometimes in considerable detail, as the primary judge found (at [57]). The claimed method does not, however, make reference to a discrete entity matching step and the specification does not refer to “entity matching” as such.

127 The appellants’ position below, expressed through Professor Grundy’s evidence, was that an entity matching step was implied by step (e) of claim 1 of the 164 Patent. By “entity matching”, Professor Grundy meant “disambiguation”. Moreover, it is clear from the joint report prepared by Professor Grundy and Professor Takatsuka that Professor Grundy saw this implied disambiguation step occurring after the search results are “returned by the remote system(s)”. Professor Takatsuka did not agree that disambiguation was implied as a step in the claimed method. The primary judge noted (at [61]) that “(n)either [Professor Grundy nor Professor Takatsuka] used the language of entity matching”.

128 The primary judge distinguished “entity matching” from “disambiguation” (at [62]):

62 ... the system needs, as a matter of practical operation, to check to see if the information retrieved about the entity matches the entity about which the query was made (‘entity matching’) but it does not, in order to function, need to work

out which of several apparently identical entities is the correct one (i.e. which of three John Smiths is the correct one) ('disambiguation').

129 At [66], the primary judge said:

66 I accept in practical terms that any embodiment of the method will need to address the issue of entity matching. If an embodiment of the method does not check to see that the entity retrieved has the same name, then the method simply will not work. I do not accept, however, that this practical matter carries with it any necessity to perform disambiguation (as explained above).

130 The primary judge did not accept that entity matching was a step in the claimed method. At [68], his Honour said:

68 The short fact is that claim 1(e) does not refer to entity matching or disambiguation. Accepting it assumes the former, it does not as a matter of language claim it. I accept that there are many references to ideas which correspond with entity matching and disambiguation in the specification. However, those do not permit me to expand the meaning of claim 1(e) to include within its terms something which, to my mind, is not there.

131 The primary judge considered, separately, claim 4 of the 413 Patent:

- 4) A method according to any one of claims 1 to 3, wherein the method includes identifying a least one entity by at least one of:
 - a) determining entity details from the search results data, the entity details including at least one of:
 - i) an entity name;
 - ii) an entity address; and
 - iii) date of birth;
 - b) comparing the entity details to existing entity details for existing identified entities; and,
 - c) determining if the entity is one of the existing entities based on the results of the comparison.

132 In respect of this claim, the primary judge found (at [71]):

71 One's initial impression of claim 4 is that it does involve entity matching. However, the Respondent submitted that the words "at least one of" in claim 4(a) impacted on the correctness of that conclusion. The argument was that the matching required needed only to be one of name, address or date of birth. It could be of all three but this was not required by claim 4. If this were correct, so the argument ran, what was *required* (as opposed to what was permitted) was not really entity matching. I accept this submission.

133 The appellants submitted that the primary judge erred in not finding that entity matching is claimed in claim 1 (and the dependent claims) of the 164 Patent and claim 4 of the 413 Patent.

134 One of the difficulties in considering Grounds 11 – 13 of the appeal is that they are referenced to the notion of “entity matching” whereas the specifications and claims do not use this expression; nor, as we have said, did the experts, who addressed, more specifically, the notion of disambiguation. “Entity matching” is an expression of convenience adopted by the parties, but its content is indeterminate save for the distinction which the primary judge drew at [62] of his reasons, quoted at [128] above.

135 The appellants’ submissions focused on claim 1 of the 164 Patent, in particular the words “to thereby determine additional information regarding the entity ...” in step (e). They submitted that, as a matter of construction, the “entity” referred to in step (e) must be the same as the “entity” referred to in step (d), in respect of whom a search is to be performed in response to the user’s command. They submitted, therefore, that the claim requires a determination by the electronic processing device that the entity (the subject of the additional information retrieved by the search) is the same as the entity whose node has been selected for searching. The appellants submitted that this is confirmed by the use in step (e) of the word “additional” in relation to the information retrieved from the search. So put, this appears to be an argument that entity matching in the sense of disambiguation is implied as a step in the claimed method.

136 We are not satisfied that the primary judge erred in the conclusion to which he came in relation to step (e) of claim 1 of the 164 Patent.

137 First, as we have noted, the specification certainly discloses ways, in varying degrees of detail, in which entity matching (however understood) might be carried out in practising the claimed method. However, the description in the specification, whilst providing necessary context, cannot add to or qualify what the claim actually defines the invention to be. This is a trite principle of claim construction.

138 Secondly, we accept, as the primary judge did, that claim 1 of the 164 Patent assumes that the retrieved additional information pertains to the selected entity in respect of whom the search is conducted. However, this does not mean that a step of entity matching (once again, however understood) is thereby implied as an essential feature of the invention that is claimed. Step (e) of claim 1 speaks of the purpose and intended outcome of performing the search step (the search for and retrieval of additional information in relation to a selected entity), but there is nothing in that integer or the other integers of the claim that secures the implementation or achievement of entity matching as a step in the claimed method itself. If entity matching were

to be carried out it could, for example, be carried out by processes outside, and discrete from, the method itself.

139 For these reasons, Grounds 11 and 13(a) of the appeal fail.

140 We are less certain about the primary judge's conclusion in respect of claim 4 of the 413 Patent. This depends on what the appellants mean by "entity matching". If entity matching is taken to mean no more than determining *apparently* identical entities, as distinct from determining the *correct* entity (or, to adopt his Honour's example, which of three John Smiths is the correct one) then such a step appears to have been claimed having regard to the broad notion of entity matching adopted by his Honour at [62]. Plainly, however, claim 4 read disjunctively (as it must be) does not entail disambiguation, which is the battle ground on which the experts met.

INNOVATIVE STEP: GROUNDS 14 – 16

141 As we have noted, the two questions of claim construction identified in Grounds 8 – 13 are raised as precursors to the appellants' submission that the claimed inventions are supported by additional innovative steps. The significance of the appellants arguing that the claimed inventions are supported by additional innovative steps is that the primary judge referred only to claim 2 of the 164 Patent and claim 1 of the 413 Patent as possessing an innovative step. As we have said, his Honour did not give express consideration to the implications of his findings in this regard in respect of the other claims whose validity was in contest on this basis. However, if it be the fact that only claim 2 of the 164 Patent and claim 1 of the 413 Patent possess an innovative step, the conclusion must be that none of the other claims are supported by such a step, with the consequence that they must be invalid on this basis. This is in addition to the fact that none of the claims was found to be valid in any event, on the independent basis that they do not claim patentable subject matter.

142 On the assumption that the claimed method requires that the "remote data sources" be controlled by third parties and that entity matching is also an essential integer, the appellants submitted that the primary judge ought also to have found that the claims in suit varied from the prior art in additional ways that make a substantial contribution to the working of the invention.

143 Our conclusions on the questions of claim construction mean that Grounds 14 – 16 of the appeal, so understood, cannot succeed. We will, nevertheless, briefly address these grounds. They are to be considered with reference to three publications, identified in the primary judge's

reasons as: **They Rule**; They Rule read with US 2004/0215648 A1 (a United States patent application entitled “System, Method and Computer Program Product for Identifying and Displaying Inter-Relationships between Corporate Directors and Boards” (**Marshall**); and US 2008/0270458 A1 (another United States patent application entitled “Systems and Methods for Displaying Information About Business Related Entities (**Gvelesiani**)).

144 They Rule is a search visualisation tool. It was developed to provide a representation of the top 1000 US companies and their directors. The primary judge found that They Rule had the capacity to search a single third party data source called “LittleSis”. They Rule did not, therefore, have the capacity to search more than one data source as required by step (e) of claim 1 of the 164 Patent.

145 While the primary judge accepted this difference, he did not accept that a capacity to search multiple remote data sources involved a substantial contribution to the working of the invention. This finding was based on evidence given by Professor Grundy and Professor Takatsuka in a joint report. Professor Grundy subsequently changed his mind about this. However, the primary judge dismissed this change of mind on the basis that, in explaining his revised view, Professor Grundy had not engaged with the question at hand.

146 The primary judge appears to have accepted that, as They Rule could only search one data source, entity matching could not have been involved in its implementation. But this was of little moment because, on his Honour’s finding, entity matching was not part of the claimed method. There was, therefore, no variance of this kind to consider for the purposes of s 7(4) of the Act.

147 The primary judge also found that the inventions disclosed in Marshall and Gvelesiani did not disclose a capacity to search more than one data source.

148 In this appeal, the appellants submitted that They Rule, Marshall and Gvelesiani did not disclose methods that are capable of searching any remote data source that is under the control of a third party. We do not accept that submission. It is plainly incorrect given the primary judge’s finding that, in the case of They Rule, “LittleSis” is a third party data source. Further, there was evidence before the primary judge that Marshall discloses the searching of remote data sources that are under the control of a third party (see at [84]), although his Honour made no express finding in that regard. The respondent did not dispute, however, the appellants’ submission as it related to Gvelesiani.

149 The appellants advanced this aspect of their appeal by reference to They Rule. They submitted that if in using They Rule a user wishes to perform a search for an entity on a third party data source, it is necessary for the user to switch to a different system. Further, no entity matching is performed by They Rule itself. The appellants submitted that searching remote data sources under the control of a third party and entity matching are variances from the prior art that are “substantial” (by which we understand the appellants to contend that those variances make a “substantial” contribution to the working of the invention). Although the primary judge did not accept that a capacity to search multiple remote data sources involved a substantial contribution to the working of the invention, he made no finding as to whether searching a remote data source under the control of a third party (assuming that to be the correct meaning of “remote data sources”) and/or undertaking an entity matching step (however that expression is understood) are variances that would make such a contribution or would qualify his finding that no substantial contribution to the working of the invention is involved in searching multiple remote data sources. Thus, if (contrary to our own conclusion) the primary judge did err in relation to the two questions of construction we have addressed, there are no findings that would indicate that his Honour would have found that the claims are supported by an innovative step (or steps) by dint of searching third party remote data sources and/or entity matching. However, given the primary judge’s findings on construction—and our lack of satisfaction that his Honour erred as alleged (other than perhaps in relation to claim 4 of the 413 Patent)—it is not necessary for us to explore this issue further.

150 The primary judge did not address whether claim 4 of the 413 Patent is supported by an innovative step. This is probably because his Honour was not satisfied that it incorporated an entity matching step. If his Honour erred in his construction of claim 4 in this regard, it would be necessary for us to remit that question to his Honour for further consideration. However, there would be no utility in doing so, given our own conclusion that none of the claims claim patentable subject matter in any event.

151 The appellants advanced an additional submission which was that, even on the primary judge’s own findings on claim construction, the claimed invention requires the capacity to search more than one data source. This alone, according to the appellants, makes a substantial contribution to the working of the invention. They submitted that the primary judge’s reasons for concluding otherwise were confined to a consideration of the expert evidence and did not reflect the statutory test.

152 We do not accept that the primary judge’s consideration does not reflect the statutory test. The primary judge set out the relevant principles at [125] – [126] of his reasons, in terms which have attracted no criticism by the appellants. His Honour then identified the factual propositions advanced by the appellants in support of the claims and analysed them by reference to the evidence that the parties adduced, specifically in relation to whether the ability to search more than one remote data source does involve a substantial contribution to the working of the invention as claimed. We do not accept, therefore, that error is revealed in relation to his Honour’s approach to determining that question or, more generally, in determining whether the claims are supported by an innovative step or steps. Absent the error in approach (for which the appellants contend) we are not persuaded that his Honour erred in his factual conclusion that the capacity to search more than one data source does not involve a substantial contribution to the working of the invention. It was, as we have said, based on the evidence before him. There is no reason for us to interfere with that finding.

THE NOTICE OF CONTENTION

153 Claim 2 of the 164 Patent and claim 1 of the 413 Patent include the step of “purchasing a report from [a/the] remote data source”. At [73] – [74], the primary judge addressed claim 2 of the 164 Patent. His Honour’s observations and findings would apply equally to claim 1 of the 413 Patent. His Honour said:

73 ... Both parties accepted that the purchase had to be from the remote data source. They differed on who was required to request the purchase or to make it. Professor Grundy thought that the user had to decide to make the purchase (rather than the system); Professor Takatsuka thought not.

74 The language of claim 2 [of the 164 Patent] accommodates both views. The claim does not specify who must make the purchase and it can be any of the user, the system or both. All that the claim requires is that there is a purchase from the remote data source.

154 The primary judge was not persuaded that this purchasing step was satisfied by a subscription having been previously paid. His Honour said that “the act of purchase comes after the search”: see at [50].

155 The respondent submitted that the purchasing step, as claimed, is no more than a “functional result”, with no description or prescription as to how the result might be achieved. It submitted that this step made no contribution to the working of the invention.

156 In relation to They Rule, the primary judge said (at [133] – [134]):

133 Turning then to the third variation ... constituted by the purchasing step, Professor Grundy was of the view in the joint report that the payment step was a substantial contribution to the working of the invention at least in relation to claim 1(c). Professor Takatsuka was of the view that it was not.

134 Although I would not describe the payment step as being weighty I do accept that it makes a substantial contribution to the working of the invention as claimed. And I do so considering the invention across the full scope of the claim accepting that it is only part of claim 2 in the 164 Patent (and claim 1 of the 413 Patent).

157 The respondent submitted that his Honour gave no reasons for preferring Professor Grundy's "bare opinion" over Professor Takatsuka's and Mr Logeman's "detailed" opinions to the contrary (Mr Logeman is the creator of They Rule).

158 We doubt that these opinions can be characterised as "detailed". Nevertheless, Professor Takatsuka said that the provider of a network visualisation tool wishing to commercialise it could seek to incorporate a profit element into the use of the tool, including by charging a one-off purchase fee, a recurring subscription fee, or by adding a premium onto the actual cost of accessing data held by a third party. According to him, even though this might incentivise a person to develop and provide such a tool in the first place, it would not alter the functionality or working of the tool or improve its effectiveness as a method of displaying information.

159 This, with respect, misses the point. The purchasing step is not directed to the provider of the tool commercialising it in some way. It is directed to the method accommodating the need for the user to purchase a report, if required, from the remote data source in order to search for and/or retrieve additional information in relation to the user-selected entity.

160 Mr Logeman's evidence was that, if he were designing such a tool so as to include data sources for which a fee is charged for purchasing a report, it would have been a straightforward matter to undertake the coding that would provide for payment information to be submitted in the course of submitting a search query. He said that incorporating such a feature would not have altered the effectiveness of the tool as a means of displaying information. The purchasing step was "simply a consequence of the choice to include commercial data sources in a system".

161 Once again, this misses the point. The question is not the relative simplicity with which a variation on the prior art can be accomplished, carried out or put into effect, but whether it makes a substantial contribution to the way in which the invention works—"substantial" in this discourse meaning "real" or "of substance", not "great" or "weighty": *Dura-Post (Australia) Pty Ltd v Delnorth Pty Ltd* [2009] FCAFC 81; 177 FCR 239 at [74]; *Blue Gentian* at [175].

162 It is true that the primary judge did not make explicit his preference for accepting Professor Grundy’s opinion over the evidence given by Professor Takatsuka and Mr Logeman, although certainly in relation to Professor Takatsuka it can be taken that his Honour did not accept his evidence as demonstrating that no substantial contribution was involved. We have expressed one reason why this might be so.

163 For our part, we are not persuaded that his Honour was necessarily in error in concluding that the purchasing step makes a substantial contribution to the working of the invention. Contrary to Professor Takatsuka’s argument, it is not apparent to us that including a purchasing step does not alter the functionality or working of the tool, or does not improve its effectiveness as a method of displaying information. If the method does not accommodate the ability to search and retrieve information which needs to be purchased from a remote data source before it can be searched and/or retrieved, and thereafter used in displaying information, then its utility as a method is correspondingly limited to one that can operate only by reference to free access information. The fact that the method can accommodate this ability suggests that this variation over the prior art does indeed make a contribution to the working of the method that is real or of substance. As we have said, the fact that the step might be relatively simple to carry out does not deny the fact of its contribution. We would not, therefore, interfere with the primary judge’s finding in this regard.

164 The respondent also submitted that, in the primary judge’s summary of the relevant principles to be applied, his Honour might have misunderstood the relevant statutory test, and might also have misunderstood and then misapplied an observation made by the plurality in *Blue Gentian* at [178]. The plurality’s observation was:

178 ... it is erroneous to assert that the test for “substantial contribution” requires establishing a difference between the prior art and the claim such that it could be characterised as an “advantage”. That is not the language of the Act. One may still have a “substantial contribution” even if the overall effect could be characterised in evaluative terms such as neutral from a particular perspective; any issue arising under s 18(1A)(c) as to utility is a separate question (see *Streetworx Pty Ltd v Artcraft Urban Group Pty Ltd* at [234] per Beach J).

165 At [126], the primary judge said:

126 The question of contribution must be assessed across the full scope of the claims: *Blue Gentian* at 117-118 [176] (per Kenny and Beach JJ, Nicholas J agreeing on this issue at 134 [283]). It is not necessary that the variation could be described as an advantage. Substantial contribution in the requisite sense may still occur even where the variation is neutral (in terms of advantage): *Blue Gentian* at 118 [178].

166 We do not see any obvious error in the primary judge’s summary of the statutory test or the relevant principles to be applied. Further, we do not accept that at [126] the primary judge misunderstood the plurality’s observation in *Blue Gentian* at [178] or that his Honour subsequently misapplied that observation in his analysis of whether the purchasing step makes a substantial contribution to the working of the invention.

167 The issue which underlies this aspect of the notice of contention is the respondent’s contention that the plurality in *Blue Gentian* were in error in saying that a particular variance may stand as a substantial contribution to the working of an invention even if it does not also provide a positive advantage to the way the invention works. If this is the real issue, then the criticism of the primary judge’s reasoning is not that his Honour either misunderstood or misapplied the plurality’s observation, but that his Honour proceeded on an incorrect principle and came to an erroneous conclusion which has given rise to an appealable error.

168 In support of this aspect of the notice of contention, the respondent called in aid Nicholas J’s remarks in *Blue Gentian* at [284]:

284 In their reasons, Kenny and Beach JJ state at [178], with reference to s 7(4) of the Act, that “[o]ne may still have a ‘substantial contribution’ even if the overall effect be characterised ... as neutral from a particular perspective”. I think there may be difficulties with this interpretation of s 7(4) of the Act though it is unnecessary to explore them in any detail in this appeal. It is sufficient to say that, in my view, it is strongly arguable that the contribution referred to in s 7(4) of the Act must be a positive contribution to the working of the invention.

169 The respondent also referred to Yates J’s analysis in *Vehicle Monitoring Systems Pty Ltd v SARB Management Group Pty Ltd (t/as Database Consultants Australia) (No 2)* [2013] FCA 395; 101 IPR 496 at [224] – [228], [232] and [235] as supporting the need for a positive contribution, although in that case his Honour was not addressing the proposition for which the respondent now contends.

170 The primary judge certainly accepted the correctness of the plurality’s observation in *Blue Gentian* at [178]. His Honour also observed that the purchasing step in the present invention could not be described as “weighty”. But this is not a finding that the purchasing step does not provide a positive advantage to the invention’s working and, for our part, we would not be prepared to make such a finding. The present case does not provide, therefore, the occasion to examine further the issue of principle which the respondent seeks to raise.

171 The final aspect of the notice of contention is the primary judge’s finding that Marshall does not disclose the purchasing step claimed in claim 2 of the 164 Patent or claim 1 of the 413 Patent. By way of background, Marshall discloses business methods that include receiving payment in exchange for “generating interlink and interlock information relating to a query entity”. Marshall discloses that this payment can comprise a one-time fee or a subscription fee for services of a specific type and/or duration. The primary judge noted (at [139]) that Professor Grundy saw this as the monetisation of the visualisation process. His Honour observed, however, that this is not the purchasing step claimed in the instant case; monetisation of the invention is not claimed. The distinction his Honour observed is the same distinction we have recorded at [159] above.

172 The respondent submitted that the primary judge’s conclusion involves two errors. The first is that his Honour failed to give reasons for his conclusion and should have accepted the evidence of Professor Takatsuka and Mr Logeman we have summarised at [158] and [160] above.

173 We do not accept that his Honour failed to give reasons for his conclusion. The distinction his Honour drew is plain and does not require elaboration beyond its identification. Further, for the reasons we have given, Professor Takatsuka’s and Mr Logeman’s evidence was not directed to the relevant question.

174 The second alleged error appears to be that the primary judge ought to have held that the claims of the patents that do not limit the invention to embodiments containing the purchasing step are invalid for the reason that they lack an innovative step. This contention is based on the principle that if the scope of a claim extends to embodiments of an invention that are not patentable inventions according to the legal criteria laid down by the Act, then the claim, as a whole, is invalid. This is what the plurality meant in *Blue Gentian* when stating (at [176]) in the context of an innovation patent that “the substantial contribution to the working of the invention must be across the full scope of the claim” (citing *Multisteps Pty Ltd v Source and Sell Pty Ltd* [2013] FCA 743; 214 FCR 323 per Yates J). Put another way, a claim will not be valid if its scope extends to both patentable and unpatentable embodiments of an invention.

175 There can be no doubt about this principle. We have already observed that if only claim 2 of the 164 Patent and claim 1 of the 413 Patent possess an innovative step, the conclusion must be that none of the other claims are supported by such a step, with the consequence that they must be invalid on this basis. Thus, the respondent’s contention is sound as a matter of principle.

176 At [139], when dealing with the purchasing step in the context of claim 2 of the 164 Patent and the disclosures in Marshall, the primary judge said:

139 ... I do not accept, therefore, that Marshall discloses a purchase step.
Accordingly, *the Patents vary from Marshall*.

(Emphasis added)

177 If, by this, the primary judge meant that, because claim 2 of the 164 Patent does not lack an innovative step (because it includes a purchasing step), all claims of both patents can be supported by that innovative step, then his Honour erred. But it is not entirely clear to us that this was his Honour's intended finding—although we accept that this part of [139] of the reasons can be read in this way.

178 On the basis that the only innovative step is the purchasing step claimed in claim 2 of the 164 Patent, then the correct finding is that claims 1, 3 and 4 of the 164 Patent are invalid because they claim embodiments that do not possess that step and, therefore, do not involve an innovative step. The position is different with the 413 Patent. Claim 1 includes the purchasing step and, as claims 2 to 4 are all dependent on claim 1, they too are directed only to embodiments that include the purchasing step. Claim 5 of the 413 Patent is an apparatus claim. It is directed to an apparatus for displaying information, in effect according to the method of claim 1. Claim 5 therefore includes the purchasing step. Each of the claims of the 413 Patent therefore only claim embodiments of the invention that involve an innovative step.

179 Ultimately, the matter is of no great moment because none of the claims in either patent claim patentable subject matter in any event, given that none of them are directed to a manner of manufacture and cannot, therefore, satisfy s 18(1A)(a) of the Act.

COSTS: GROUNDS 17 – 18

180 At the urging of the parties, the primary judge made a global costs order (in respect of the main proceeding and the cross-claim) in favour of the respondent (as the ultimately successful party) subject to a reduction, which was assessed having regard to the issues on which the parties succeeded or failed. The appellants argued for a reduction of 70%; the respondent argued for a reduction of 25%. The primary judge awarded a reduction of 45%.

181 The appellants raise two grounds of appeal. The first (Ground 17) can be put aside immediately because it is premised on us concluding that the primary judge erred in finding that the invention was not a manner of manufacture. The second (Ground 18) is that the primary judge

ought to have awarded a discount of 70%, not 45%. The appellants did not advance any submissions in support of this ground. It stands, therefore, as a bare allegation.

182 The primary judge gave detailed consideration to the many arguments agitated by the parties in support of their respective positions: *Encompass Corporation Pty Ltd v Infotrack Pty Ltd (No 3)* [2018] FCA 942. There is no manifest error in his Honour's assessment of the appropriate discount. There is, therefore, no basis on which we would interfere with the costs awarded below. Grounds 17 and 18 of the appeal fail.

DISPOSITION

183 The appeal will be dismissed with costs.

SCHEDULE

Claims of the 164 Patent

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

- 1) A method of displaying information relating to one or more entities, the method including, in an electronic processing device:
 - a) generating a network representation by querying remote data sources, the representation including:
 - i) a number of nodes, each node being indicative of a corresponding entity; and,
 - ii) a number of connections between nodes, the connections being indicative of relationships between the entities; and,
 - b) causing the network representation to be displayed to a user;
 - c) in response to user input commands, determining at least one user selected node corresponding to a user selected entity;
 - d) determining at least one search to be performed in respect of the corresponding entity associated with the at least one user selected node by:
 - i) determining an entity type of the at least one user selected entity;
 - ii) displaying a list of available searches in accordance with the entity type; and,
 - iii) determining selection of at least one of the available searches in accordance with user input commands;
 - e) performing the at least one search to thereby determine additional information regarding the entity from at least one of a number of remote data sources by generating a search query, the search query being applied to one of the number of remote databases to thereby determine additional information regarding the entity; and,
 - f) causing any additional information to be presented to the user.
- 2) A method according to claim 1, wherein performing a search includes purchasing a report from a remote data source.
- 3) A method according to claim 1 or claim 2, wherein the method includes presenting additional information at least in part by modifying the network representation.

- 4) Apparatus for displaying information relating to one or more entities, the apparatus including an electronic processing device that:
 - a) generates a network representation by querying remote data sources, the representation including:
 - i) a number of nodes, each node being indicative of a corresponding entity; and,
 - ii) a number of connections between nodes, the connections being indicative of relationships between the entities; and,
 - b) causes the network representation to be displayed to a user;
 - c) in response to user input commands, determines at least one user selected node corresponding to a user selected entity;
 - d) determines at least one search to be performed in respect of the corresponding entity associated with the at least one user selected node by:
 - i) determining an entity type of the at least one user selected entity;
 - ii) displaying a list of available searches in accordance with the entity type; and,
 - iii) determining selection of at least one of the available searches in accordance with user input commands;
 - e) performs the at least one search to thereby determine additional information regarding the entity from at least one of a number of remote data sources by generating a search query, the search query being applied to one of the number of remote databases to thereby determine additional information regarding the entity; and,
 - f) causes any additional information to be presented to the user.